

AMENDMENTS TO THE CLAIMS

Claims 1-14 (canceled) Please cancel claims 1-14 without prejudice to the possibility of filing one or more continuing applications directed to the subject matter recited therein.

15. (New) A robotic, modular road repair machine comprising:

a movable vehicle having at least one slot defined by predetermined dimensions designed to receive a work module;

at least one work module having predetermined dimensions adapted to fit within each said slot;

means for robotically moving said at least one work module between a working position and an inoperative position; and

means for controlling said means for robotically moving and for controlling actuation of said at least one work module.

16. (New) The road repair machine of claim 15, further comprising a plurality of said slots and a plurality of said work modules, wherein each said slot has the same predetermined dimensions and each said work module has substantially the same predetermined dimensions.

17. (New) The road repair machine of claim 16, wherein said work modules may be interchanged among various slots, and wherein said means for controlling keeps track of positions of said respective work modules for controlling said actuation of said work modules and said movement of said work modules between working and inoperative positions.

18. (New) The road repair machine of claim 16, wherein at least two of said work modules have different functions, said work modules being selected from the group consisting of: radar/seismic module, sawing module, drilling module, asphalt filling module, level sensing module, sweeping module, tack coat module, concrete filling module, digging module, grinder module, rolling module, surveying module and crack and joint sealing module.

19. (New) The road repair machine of claim 15, further comprising a machine engine for driving movement of said machine.

20. (New) The road repair machine of claim 15, further comprising at least one hopper for containing a road repair material to be delivered to at least one said module for filling defects; and means for conveying the repair material from said at least one hopper to said at least one module.

21. (New) The road repair machine of claim 20, wherein said at least one hopper is modular and may be interchanged among various locations in said machine.

22. (New) The road repair machine of claim 15, further comprising a liquid storage tank for supplying liquid to at least one said module; and means for transporting said liquid between said liquid storage tank and said at least one module.

23. (New) A system for efficiently repairing road surfaces; said system comprising:
a relatively large machine including a movable vehicle having multiple slots, each defined by predetermined dimensions designed to receive a work module; multiple work modules having predetermined dimensions adapted to fit within each said slot, and wherein at least one of said modules comprises a surveying module; means for robotically moving said work modules between a working position and an inoperative position; and means for controlling said means for robotically moving and for controlling actuation of said work modules; and

a relatively small machine including a movable vehicle having at least one slot defined by predetermined dimensions matching said predetermined dimensions of said slots included in said relatively large machine; wherein said surveying module may be removed from said large machine and placed in said slot of said small machine to conduct surveying operations prior to road repair, and then removed from said small machine and replaced in a slot of said large machine for use during road repair operations.

24. (New) The system of claim 23, wherein said surveying module is a radar/seismic module.

25. (New) A method of efficiently repairing a road surface, said method comprising the steps of:

providing an electronic map of regions of a road surface to be repaired to a controller on board a repair machine;

providing multiple work modules in the repair machine, said work modules having various

dedicated work functions;

positioning the repair machine to optimize a number of work modules that may be actuated simultaneously to perform work functions along the road surface to be repaired; and

robotically controlling the work modules to perform repair operations in accordance with the electronic map.

26. (New) The method of claim 25, wherein the work modules are received in slots in the repair machine, said method further comprising changing a location of at least one work module in the repair machine from a first slot to a second slot.

27. (New) The method of claim 25, wherein one of the work modules comprises a surveying module, said method further comprising placing the surveying module in a second, smaller vehicle; and surveying the road surface to be repaired prior to conducting repair operations with the repair machine having multiple work modules.

28. (New) The method of claim 27, wherein said surveying module is a radar/seismic module.

29. (New) The method of claim 27, further comprising generating said electronic map from said surveying operation.

30. (New) The method of claim 25, further comprising providing a least one hopper containing road repair material, and controlling a transfer rate of said road repair material to at least one of said modules.

31. (new) The method of claim 30, further comprising monitoring an amount of road repair material in at least one said hopper; and estimating a time remaining until said at least one hopper needs to be refilled.

32. (New) The method of claim 27, further comprising placing markers along the road surface to be repaired, prior to said surveying and said repair operations, said markers providing reference points for both vehicles during operations.

A/ 33. (New) The method of claim 25, further comprising interchanging positions of said work modules within said slots to optimize simultaneous repair operations.
